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ABSTRACT

"Protocol materials" are records or recordings of a wide variety of behavioral situations. Characteristically they are neither simulated nor extensively edited. They are to be used for the empirical verification of concepts derived from both educational theory and the social sciences. They are attempts to capture reality so that it may be studied and analyzed in detail. Written records (e.g., check lists, matrices, observation systems) and audio tapes may be designated as protocol materials but videotape recordings will likely become the predominant medium. In teacher education the "protocol materials process" is seen as a means of bringing theory and reality together in the theoretical, training, and field components of preparation programs. Information (teacher relevant theory) is presented (by such means as books, lectures, or tape-slide presentations) as a hypothesis or hypothetical construct. Protocol materials are presented for analysis followed by discussion which focuses on the question of whether or not they tend to confirm or deny the hypothesis. Protocol materials would usually be made in the training complex in which they are used, often by the students themselves, because of the need for relevance and immediacy. Such a process has implications for broader aims: to individualize instruction, personalize a student's philosophy of education, and provide him with tools necessary for continued self-evaluation and appraisal of his role and situation. (JS)

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PROTOCOL MATERIALS: A CLARIFICATION

by

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Since the publication of Teachers for the Real World considerable interest has been aroused by the Protocol Materials concept.[1] However, there seem to be as many views of the nature of the concept, and indeed of the meaning of the term Protocol, as there are scholars interested in it. The latter are drawn from virtually all fields of educational inquiry, including psychology, technology, theory, counselling and administration, and especially from among those most directly concerned with the training of teachers. To some Protocol Materials is simply a new name for Audio-Visual Materials. To others it is a powerful notion which can best be developed by incorporating it, either in whole or in part, into their own particular instructional approach. In either case some distortion of the original concept takes place and the variations which result often bear little resemblance to the concept as postulated by Dr. Smith.

In fact, work on the development of Protocol Materials is going forward before the term has been either adequately described or completely understood. This paper, therefore, is an attempt to clarify the Protocol Materials concept in order that general agreement on its nature may be reached. It will also attempt to describe how a Protocol Materials process might be used in Teacher Training Programs.

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[1] American Association of Colleges for Teacher Education, Teachers for the Real World. B. Othanel Smith, Principal Author, 1969, p. 52-53. See in general Chapters 4 and 5, which deal with the theoretical preparation of teachers.

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We begin this attempt at clarification with the word "protocol" which has itself been the source of much misunderstanding. Because "protocol" in the diplomatic sense is concerned with hierarchies, it has been widely assumed that "protocol" in Protocol Materials refers to a hierarchy of procedures which should be used in the production of such materials. This idea has been bolstered by the fact that a "protocol" in a psychological test does refer to the procedure to be followed in administering the test. This notion of "protocol" as a hierarchy of procedures, however, is at best misleading, and at worst counter-productive. Instead the dictionary definition of "protocol" as a record must be adopted as a first step toward defining the Protocol Materials concept.[1] Next the idea that we are concerned with a particular kind of record must be added and a clue to this is provided by the philosophical notion of a "protocol statement". This is "a statement reporting an observation or experience in the most fundamental terms without interpretation: sometimes taken as the basis of empirical verification, as of scientific laws".[2]

Following the first part of this definition we postulate that Protocol Materials are records or recordings of real, as opposed to simulated events, concerned with the fundamental data of human experience. From the second part of the definition of a "protocol statement" we can extract the very powerful idea of empirical verification, which becomes in fact central to our own definition of Protocol Materials which we now offer for discussion and criticism.

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[1] Random House Dictionary of the English Language, College Editions (New York: Random House, 1968)

[2] Ibid.

> Protocol Materials are records or recordings of a wide variety of behavioral situations. Characteristically, they are neither simulated nor extensively edited. They are to be used for the empirical verification of concepts derived from both educational theory and the social sciences.

Before going on to discuss the process of using the Protocol Materials and relating the process to Teacher Training Programs a word or two of comment and further explanation of the definition and its implications is in order.

It is clear that if Protocol Materials are to be records, or recordings of human behavior without interpretation they cannot, by definition, be simulations, either scripted or improvised, or staged re-enactments, rehearsed or otherwise of previously observed or assumed events. It must be stressed, furthermore, that Protocol Materials cannot be used merely for illustrative purposes or as examples as this excludes the notion of empirical verification which is essential to the definition.[1] Nor, for the same reason can they be used to "model" norms of acceptable and desirable behavior.

One way of looking at Protocol Materials is that they are attempts to "capture reality" in some sort of recorded form so that it may be studied and analyzed in detail. One means of recording is a written record, and indeed for a long time that was the only means, together with, perhaps drawings and pictures. Today there are many sophisticated methods of obtaining written records, ranging from check-lists to matrices and from observational systems to verbatim transcripts. The main disadvantage of such records is that they are primarily concerned with verbal behavior and

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[1] Dr. Smith in Teachers for the Real World (p. 63) deals with the question of illustrations. "Protocol materials should not be used merely to illustrate points in education courses. The whole procedure should be turned about so that the principles of the psychological, sociological, and philosophical studies, as well as those of pedagogy, are brought to the analysis of protocol materials, not the other way around."

can only record other forms of behavior in the most fleeting manner. This is not to say that written records cannot be designated Protocol Materials, but only that of necessity they must be considerably limited in the totality of events which they are able to capture.

One way in which the record of verbal behavior may be made both more inflectively accurate and more complete is by the use of audio-tapes. Such tapes, however, by their very nature are limited and specifically exclude non-verbal behaviors which, as far as teacher preparation programs are concerned, are an important part of the reality we wish to capture. Photographs and slides, also possible forms of Protocol Materials, have limited ability to capture the dynamics of reality. Sound-film, of course, offers the advantaged of capturing both verbal and non-verbal behavior. However, because of high production costs, it is not practical to shoot hour upon hour of film without knowing whether the footage would be useful for Protocol Materials. The most efficient way to use film is to develop a script according to some pre-determined objective, and plan and shoot accordingly. When this is done, it is clear, it goes against the very essence of the concept of Protocol Material, and such films should not be designated as Protocol Materials. Such films may be a valuable part of a teacher preparation program, but properly belong in the training component rather than the theoretical component.[1]

The other major means of recording behavior is video tape. As will become clear, we are committed to the extensive use of video tape recorders in the production of Protocol Materials. We are not, however, referring to studio recording facilities, but rather to portable video tape recorders which

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[1] See below p. 6

can be taken easily into classrooms, meetings, playgrounds, streets and homes.

The advantages of portable video tape equipment are considerable. It is easy to use by students, does not require a technician, is highly portable, can be taken anywhere by one person, is relatively inexpensive (around $2,000 per set) and requires no lights and little ancillary equipment. Video tapes are relatively inexpensive and have the advantage that they can be erased and used over again many times, hence there is no direct additional cost for video tapes that were produced but not used for Protocol Materials.

The disadvantages of portable video tape recorders are such that they will have little effect on Protocol Materials as we conceive of them. For instance, the fact that video tape is more difficult to edit than film is of little importance, because editing violates the notion that there should be no interpretation. Again, the fact that there exists what are called incompatibilities between various video tape recorders is not too important, because as we shall see later, tapes by and large will be used in the same local situation in which they were produced. Also, advances in technology are making it increasingly easy to process tape from one size or kind of machine to another. Presumably, Federal activities in the Protocol Materials area would provide national or regional facilities for processing tapes from one size to another.

In general portable video tape recorders offer far more advantages than disadvantages for Protocol Materials and we assume that they will become the predominant medium for use in the Protocol Materials process. Before getting

into the process itself, it is necessary to consider the three major interrelated parts of a teacher preparation program.[1]

These are the: 1. Theoretical Component

2. Training Component

3. Field Component

There are other courses that the prospective teacher would take which are not considered part of professional preparation and need not be considered here.

The theoretical component includes the theoretical knowledge deemed necessary for the professional education of the teacher. The training component has traditionally included the methods courses with a "how to" focus. It is assumed that the methods courses are related to the "theory" courses and that the results are then applied in the field component, which is to say student teaching. However, in practice, there is very little carry over from the Theory Courses to student teaching and even less when the teacher goes out into the real world as a teacher. Protocol Materials are, in essence, to be used to improve, hopefully by several orders of magnitude, the teaching of the Theoretical component. When coupled with the training and field components, the result will be not only a better learning of the theory itself, but also the ability to <u>use the theory in the classroom and other non-classroom activities</u>. Hence the gap between theory and practice will be narrowed considerably, and perhaps eventually eliminated.

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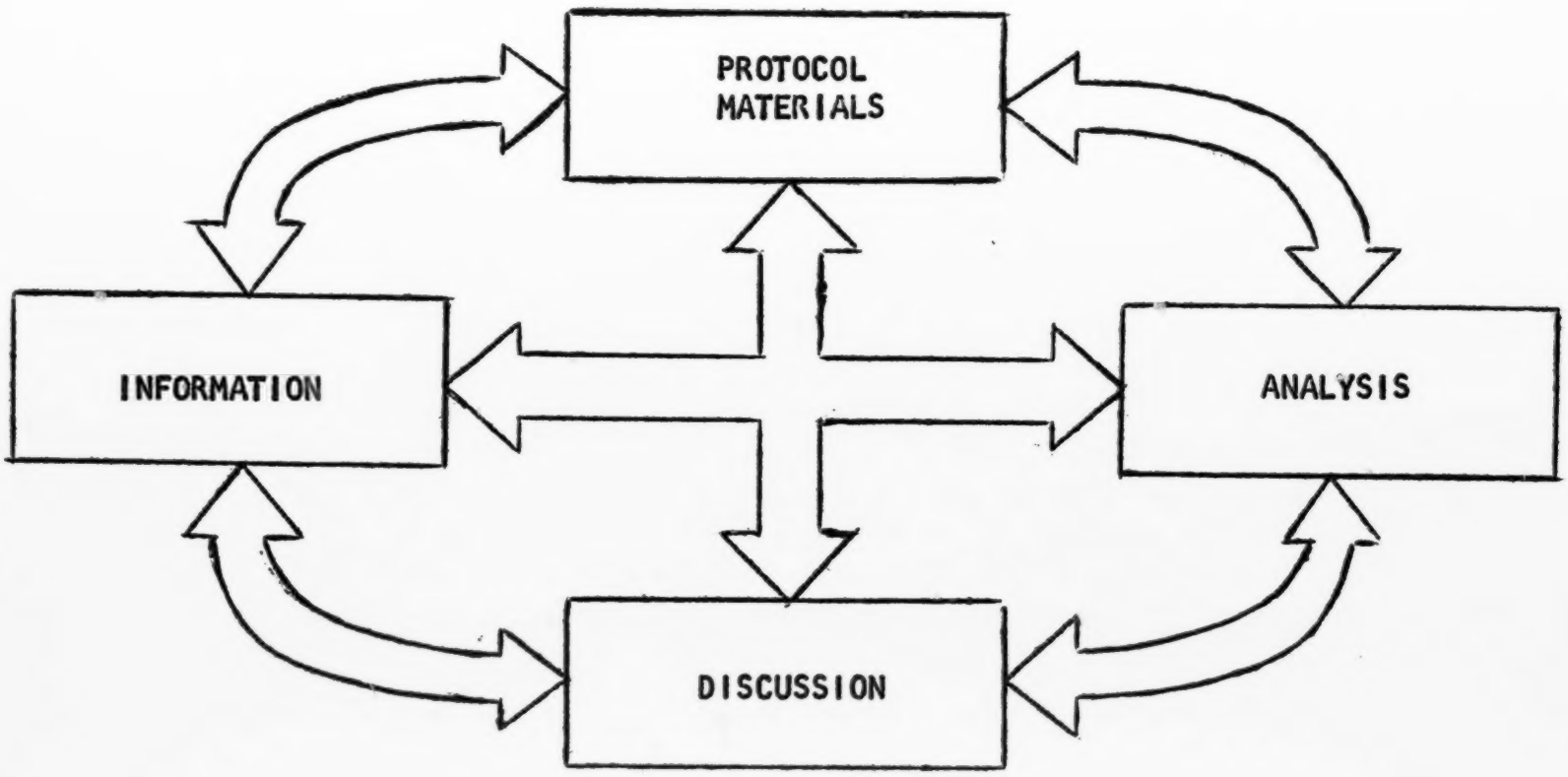
[1] <u>Teachers for the Real World</u>, p. 41.

The manner in which theory and reality are brought together we call the Protocol Material Process.

THE PROTOCOL MATERIALS PROCESS



The four components of the process are:

1. Information. The information box in the diagram has a function that might best be described as "cognitive input". Teacher relevant theory is to be presented by means which might include books, lectures or tape-slide presentations, either on a group or individual basis. However, the information will not be presented to the student as a fixed and pre-determined fact or facts, to be learned, but as a hypothesis or hypothetical construct.

2. Protocol Materials. The Protocol Materials will probably be video-tapes and will be recordings of real behaviors and events which can be related to input from the information box.

3. Analysis. While identified in the model as a separate activity, analysis will in reality take place to a large degree at the same time as the viewing of the Protocol Materials.

4. Discussion. This is perhaps the most critical part of the process. Discussion will focus around the question of whether or not the Protocol Materials tend to confirm or deny the hypothesis or

> hypothetical construct. It is hoped that no student would be prepared to do so on the basis of only one observation. The process would, therefore, continue with the viewing of more tapes related to the hypothesis or by referring to the information box for more input or the introduction of related concepts.

Of course the process need not be linear. For example the cycle might begin at the Discussion point and proceed to the Protocol Material viewing before seeking Information or entering into an extended Analysis. As a non-linear process allows entry into the process at any point and also permits the student or group of students to move to any other point in any order at any time, it is of its very nature highly flexible and dynamic.

This is also true of our view of the relationship between the three components of the teacher preparation program. We consider that early field experience will be highly desirable in order to obtain maximum benefit from the use of Protocol Materials. It follows, therefore, that the sequence of Theory Courses, Methods Courses and Student Teaching, following each other in time, must be considerably modified. While we consider that there will be an initial emphasis on the teaching of Theory, we assume that there will be a very early introduction of both Training and Field experiences and that these will play increasingly important roles. It is our hope that the three components will in fact be highly inter-related and inter-dependent and to illustrate this let us follow a hypothetical student through part of the teacher preparation process.

1. FIELD OBSERVATION	Suzie B. has been observing classes throughout the Training Complex.[1] She has spent several hours watching a teacher using contingency
2. ANALYSIS	management techniques, which, as far as Suzie can tell, do not seem to be working very well.
3. DISCUSSION	In reporting on her observations to her discussion group she discovers that several other of her fellow students have made similar observations so she suggests that the group as a whole take a closer look at classroom management problems in

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[1] See below and also Teachers for the Real World. pp. 95-109.

4. INFORMATION

5. PROTOCOL MATERIALS

6. ANALYSIS

7. DISCUSSION

8. TRAINING FILMS

9. MICROTEACHING LAB

10. FIELD PRACTICE

11. ANALYSIS

general and at contingency management techniques in particular. The instructor guides the group to appropriate self-instructional materials which present various aspects both pro and con, of various classroom management techniques, leading to the hypothesis that contingency management techniques are an efficient and necessary part of every teacher's repertoire of skills. To test the hypothesis they view several video tapes, some made by themselves, of various real classrooms, some using or attempting to use contingency management techniques and others using more conventional techniques. The group is about evenly divided at the end of this viewing and after some more discussion, about half accept the hypothesis and about half reject it. Suzie, however, feels that she cannot make up her own mind until she has tried the technique for herself. She therefore makes arrangements to view training films on contingency management and to practice the basic skills in a micro-teaching setting. After this sequence she is given the opportunity to practice in a real classroom, after which she and her instructor view the tapes made of this field practice situation. Suzie then comes to the following conclusions:

1. Reinforcement techniques are an inescapable part of every teaching situation. She will, therefore, improve her skills in this area but without instituting a formal contingency management program in the classroom, as she considers that it would be an unnecessary elaboration of a not altogether satisfactory technique.

2. For individual children, however, who are beset with a variety of problems, she will try to set up contingency managed settings which will attempt to extinguish inappropriate behaviors before proceeding to establish appropriate behaviors.

It is clear from this description that we envisage that the student teacher will be able to move freely from one component of the Teacher Training program to another. Indeed the distinctions we have made between the various components will in all probability fade in the course of time. This merging process will be hastened if the Training site is part of a Training Complex, wherein all the facilities normally required by a student will be located.

We also assume that these facilities will include all the equipment necessary for the production of Protocol Materials. As is evident from the description above some of the Materials will be made by the students themselves. What is perhaps less obvious is that we consider that most of the Protocol Materials to be used at any one complex will be both made and retained in that complex. There are several reasons for this, connected largely to the real need of relevance and the felt need, in students that is, of immediacy. In the simplest terms we consider that students will relate much more readily to Materials produced at best by themselves and at worst within the confines of their own familiar Training Complex, than to Materials, no matter their technical excellence, produced at a distant location. An added bonus is that by keeping Protocol Materials within a Training Complex we hope to avoid many of the difficult ethical and legal problems that have afflicted other producers of instructional materials.

One thing that is readily apparent in the foregoing description is that we intend that each student should follow as far as possible his or her own course of study. This individualization we believe to be an indispensable part of the Protocol Materials process and indeed the Teacher Training program as a whole, whilst at the same time recognizing the critical importance of the Group discussions. The key idea which we must stress is that each student must be left free to accept or reject, to either an absolute or relative degree, the educational theories, hypotheses and concepts which are presented to him or her in the course of training. We do not believe that students should be called upon to accept one or another Educational Philosophy, but rather that each student should be encouraged and indeed almost required to formulate his own educational philosophy. Only by encouraging such formulations can we hope to bridge the usual yawning gap between the theory of education, as presented in the schools and colleges

of education, and the practice of education, as carried on in the schools and school districts of the nations. We see Protocol Materials playing an increasingly important part in the process of closing this gap.

An added advantage of using the Protocol Materials process may be that it will help individual students to establish their own self-evaluation skills. Our aims in general are to first individualize the process of instruction, second to personalize the student's philosophy of education and third to provide him with the tools necessary for continued self-evaluation and appraisal of his role and situation.

To this we must add the hope that from the very start the Protocol Materials process will be interdisciplinary in character, at the very least as regards content. It is our experience that any given hour of video tape recordings, especially when shot in classrooms, contains not one but many educational concepts, derived from, for example, psychology, anthropology, philosophy, linguistics and social theory. It is, therefore, misleading to the student to present a recording as indicative of only one concept. All kinds of things are in fact going on in any one situation at any one time. To limit the scope of the Material is to reduce it to the level of illustration. Thus the gradient of difficulty over the two or perhaps three years when the student will be working with Protocol Materials will be primarily a progression from simple to sophisticated analysis which even from the beginning will be concerned with several concepts simultaneously. Clearly implementation strategy will aim at an interdisciplinary approach from the start and this will require that all the various disciplines be invited to interface and participate in the development of Protocol Materials.

Pittsburgh, Pennsylvania March, 1970